MEDICAL SCHOOL AND RESIDENCY PROGRAM CURRICULUM RESOURCES ON DRUG ABUSE AND ADDICTION

Methamphetamine Lecture and Interclerkship

Creighton University School of Medicine

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Methamphetamine Interclerkship Experience

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Introduction

The primary care physician plays an important role in the identification of substance use in adolescents and adults (Griswold et al., 2008). Early identification and treatment of use and abuse is important before use escalates. About 20 percent of patients seeing a family physician have substance abuse problems. Primary care physicians will be confronted with many patients suffering from substance use disorders. Physicians in training must recognize that they will be confronted with patients who suffer from substance use and abuse and must recognize the red flags in a patient's history, as well as specific physical findings related to substance use (Mersy, 2003).

The interclerkship curriculum provides third-year medical students with important information about the significance of methamphetamine abuse and dependence and its effects on the individual and society. This curriculum is typically offered in the third year of medical school, when students have started their clinical education and are most likely to encounter patients with methamphetamine-related issues. The 8-hour module can be structured as one 8-hour course or two half-day courses. A 4-hour, half-day option is also available, and the product guide includes a schedule of suggested activities. Although designed for third-year medical students, the program could be adapted for other medical students or medical residents.

The module includes a lecture with PowerPoint presentation about the diagnosis and treatment of methamphetamine abuse and dependence; law enforcement aspects of methamphetamine abuse; and the neuropathology, neuropharmacology, and treatment of methamphetamine abuse and dependence. Video clips from the NIDA/HBO production "Addiction" can be shown, followed by a facilitated panel discussion with community members such as methamphetamine abusers in treatment, social workers, community agency representatives, and treatment professionals. Options for breakout sessions are a training session for diagnosing methamphetamine dependence with standardized patients, meeting with recovering methamphetamine users (consenting volunteers in recovery), and a training session in motivational enhancement therapy. The course ends with a debriefing and learning assessment (using the PowerPoint interclerkship assessment questions).

Key words: Drug abuse; drug addiction; substance abuse; methamphetamine abuse; methamphetamine treatment

Educational Objectives

- Cite prevalence data and summarize diagnostic information about methamphetamine abuse/dependence.
- Demonstrate knowledge of neuropathology and neuropharmacology of methamphetamine abuse/dependence.
- Learn treatment options and goals for methamphetamine abuse and dependence.
- Demonstrate knowledge of educational resources for information about methamphetamine abuse and dependence.
- Identify local resources for the treatment of methamphetamine abuse and dependence.

Curriculum Module Components

This product provides an outline for medical school faculty who want to offer a 1-day interclerkship course to educate medical students and residents about the significance of methamphetamine dependence and its effects on the individual and society. Although designed for third-year medical students, the program could be adapted for other medical students or medical residents.

Length of Course

The methamphetamine interclerkship course is designed to be offered as a 1-day (8 hours) course. We also present guidelines for a half-day (4 hours) course.

Requirements

- Course director(s)
- Small-group facilitators
- Computer
- Screen
- LCD projection
- Adequate space to conduct a panel discussion and small-group discussions
- Supplemental readings or reading list
- Information about local resources for the treatment of methamphetamine abuse/dependence

Recommended Resource

NIDA/HBO Centerpiece Documentary (click on each of nine film segments: total time is 1 hour) http://www.hbo.com/addiction/thefilm/index.html

Background on the Interclerkship Course Model at Creighton University

The methamphetamine interclerkship course was introduced at Creighton University School of Medicine in the 2008–2009 academic year as a part of the interclerkship course titled Dimensions of Clinical Medicine, which began during the 2002–2003 academic year. The Dimensions of Clinical Medicine course proved to be an effective way to present clinically relevant content to third-year students (Sakowski et al., 2005). Consistent with principles of adult learning, the course offers students knowledge and skills at the time they are most likely needed (i.e., during the first clinical year) (Knowles, 1988). General topics for this course include legal issues, bioterrorism, end-of-life and palliative care, professionalism, alternative medicine, substance abuse, and human sexuality. The common thread is that these topics all represent important areas of competence needed by third-year students, but which are unlikely to be covered in the discipline-specific clerkships.

Each interclerkship course is composed of two half-day sessions or a 1-day session. All interclerkship courses at our medical school are required. The interclerkship courses employ multiple methods of instruction, including lectures, small groups, panel discussions, and other interactive activities designed to promote student learning and engagement.

Facilitator Guide: Full Day

Course Goal

Educate students/residents about the significance of methamphetamine abuse and dependence and its effects on the individual and society.

Course Objectives

At the conclusion of the interclerkship course, students will be able to:

- Cite prevalence data and summarize diagnostic information about methamphetamine abuse/dependence.
- Demonstrate knowledge of neuropathology and neuropharmacology of methamphetamine abuse/dependence.
- Learn treatment options and goals for methamphetamine abuse and dependence.
- Demonstrate knowledge of educational resources for information about methamphetamine abuse and dependence.
- Identify local resources for the treatment of methamphetamine abuse and dependence.

Course Schedule

8:00 a.m. – 8:30 a.m. 8:30 a.m. – 9:30 a.m.	Registration and breakfast Advanced lecture about the diagnosis and treatment of
	methamphetamine abuse and dependence using a PowerPoint presentation (slides 31–35, 45–48)
9:30 a.m. – 9:45 a.m.	Break
9:45 a.m. – 10:15 a.m.	Methamphetamine abuse and dependence: A legal/law enforcement perspective
10:15 a.m. – 11:15 a.m.	View film clips from the NIDA/HBO production "Addiction"*
11:15 a.m. – 12:00 p.m.	Facilitated panel discussion with question-and-answer session with students (panel members: methamphetamine-dependent individual in treatment, social worker, community agency representative [e.g., social services], treatment professional)
12:00 p.m. – 1:00 p.m.	Lunch
1:00 p.m. – 2:00 p.m.	Lecture about neuropathology and neuropharmacology, and treatment of methamphetamine abuse and dependence, using PowerPoint presentation (slides 16–30, 36–44, 49–55)
2:00 p.m. – 4:00 p.m.	Breakout sessions with options of:
	 Training session for diagnosing methamphetamine dependence with standardized patients
	Meeting with a recovering methamphetamine-dependent

individual (with consenting volunteers in recovery)

Training session for motivational enhancement therapy

4:00 p.m. – 4:15 p.m. Debriefing and learning assessment

PowerPoint interclerkship assessment questions (slides 84–89).

This schedule can also be adapted for two half day sessions.

*Information on the nine film clips and the Web address are located in the "References and Recommended Reading" section of this curriculum resource. If the film clips cannot be viewed during the interclerkship, they should be viewed as a pre-assignment. The session can then continue with the facilitated panel discussion and the agenda should be adjusted accordingly.

Facilitator Guide: Half Day

Course Schedule

8:00 a.m. – 9:00 a.m.	Advanced lecture about the diagnosis and treatment of methamphetamine abuse and dependence using a PowerPoint presentation (slides 31–35, 45–48)
9:00 a.m. – 9:30 a.m.	Methamphetamine abuse and dependence: A legal/law enforcement perspective
9:30 a.m 9:45 a.m.	Break
9:45 a.m. – 10:15 a.m.	Panel discussion with question-and-answer session with students
10:15 a.m. – 11:15 a.m.	Lecture about neuropathology and neuropharmacology and treatment of methamphetamine abuse and dependence, using PowerPoint presentation (slides 16–30, 36–44, 49–55)
11:15 a.m. – 12:00 p.m.	Debriefing and wrap-up

Discussion Questions

The discussion will be facilitated by a faculty member. The discussion topics/questions will depend on the participants of the discussion. Suggested panelists include:

- Legal/law enforcement professionals who can talk about the significance of the problem from a law enforcement perspective.
- Willing/consenting individuals in recovery who are able to answer questions about their drug use.
- Family members who are willing to talk about their loved one's methamphetamine abuse and its impact on the family.
- Social workers or community services representatives with expertise on local resources to help methamphetamine-abusing individuals.
- Non-psychiatry/non-addiction healthcare providers who are willing to share their experiences of working with individuals using methamphetamine.
- Addiction treatment providers who are able to talk about their experiences and frustrations when working with methamphetamine abusers.

This list can be modified and expanded based on the availability of willing individuals.

The goal of this exercise is to encourage and foster questions from the audience/students. However, in order to get them going, the facilitator might need to begin by asking very general questions to the participants of the panel.

The facilitator should ask each member of the panel about their experiences with methamphetamine abusers or, for individuals in recovery, about their experiences using the drug itself.

Then the facilitator should address the audience and ask if they have any questions for the panel participants. To encourage audience members to speak, point to a particular member of the audience (e.g., anyone who maintains eye contact) and ask that person one of the questions below.

- What do you think of what was just said?
- Do you have any experience with a patient who has used methamphetamine? (If
 participants say no, ask them what they foresee as being the biggest problems in seeing
 patients who use methamphetamine.)
- How would you deal with some of the problems that were identified by the panel members?
- What do you think was the most important thing you learned today?
- As you hear all of this, what is going on in your mind?

Panel Members Discussion Guide

1. Legal/Law Enforcement Professionals

Recruit professionals/experts who have:

- Some public relations responsibility/experience to ensure comfort with public speaking.
- Experience with and knowledge about the methamphetamine problem and its consequences, with special relevance to law enforcement.
- Some expertise about the challenges to law enforcement from methamphetamine abuse.

These experts may talk about the following topics:

- Significance of the problem from a law enforcement perspective.
- Legal options for dealing with methamphetamine-dependent individuals (e.g., jail vs. diversion programs vs. treatment).
- Meth labs and their impact on the community.

2. Methamphetamine-dependent Patients in Recovery

Recruit patients who are:

- In recovery for at least 6 months to a year to minimize the risk of relapse due to the stress of public speaking.
- Medically and psychiatrically stable.
- Comfortable talking about their experiences of seeking, abusing, and recovering from the effects of methamphetamine.

The methamphetamine-dependent patient may talk about the following topics:

- His/her experience with the use of methamphetamine, its physical effects, and his/her cravings for the drug, withdrawal, and recovery.
- Consequence of drug use on his/her life and the lives of his/her family and friends.
- His/her experience in treatment and subsequent to treatment (including potential relapses and returns to treatment).
- What did and did not help in recovery.

3. Family Members of Methamphetamine Users

Recruit people who are:

 Willing to talk about their loved one's methamphetamine abuse and its impact on the family

4. Social Workers or Community Services Agency Representatives

Recruit professionals who have:

- Some public relations responsibility/experience to ensure comfort with public speaking.
- Experience and knowledge of methamphetamine dependence and its consequences on the individual and family.
- Some expertise with the community services/agencies that can impact methamphetamine-abusing individuals (e.g., child protective services, adult protective services, etc.).
- Expertise in the availability of local resources to promote methamphetamine-abusing individuals' continued sobriety (e.g., social services available, public assistance programs, treatment options).

These experts may talk about the following topics:

- Significance of the problem from their professional perspective.
- Treatment options for methamphetamine-dependent individuals; inpatient versus residential versus partial/day programs versus outpatient programs.
- The availability of public and social services for methamphetamine abusers in recovery.
- The interface of the legal system and social services agencies and its impact on methamphetamine abusers.

5. Nonmedical Treatment Providers (e.g., psychologist, mental health therapist) Recruit professionals who have:

- Some public relations responsibility/experience to ensure comfort with public speaking.
- Experience and knowledge of methamphetamine dependence and its impact on mental health.
- Some expertise with mental health treatment options that can be offered to the methamphetamine-abusing individuals.

These experts may talk about the following topics:

- Significance of the problem from their professional perspective.
- The mental health treatment options for methamphetamine abusers.

6. Addiction Treatment Providers

Recruit professionals who:

- Have experience and knowledge of methamphetamine dependence.
- Understand treatment options for methamphetamine-dependent individuals

These experts may talk about the following topics:

• Their experiences and frustrations when working with methamphetamine abusers

Breakout Sessions Guide

1. Breakout Session for Diagnosing Methamphetamine Dependence

- Discuss the DSM-IV criteria for dependence versus abuse.
- Interview the standardized patient about his/her methamphetamine abuse using the DSM-IV criteria without elaboration.
- Utilize motivational enhancement therapy (MET) techniques (i.e., identifying the contradictions in what patients may be saying versus what is really happening in their lives) to demonstrate the improved patient response.

2. Breakout Session with Methamphetamine-Dependent Individuals

The methamphetamine-dependent individuals may talk about the following topics:

- Their experience with craving the drugs, their efforts to obtain methamphetamine, their experiences with the use of methamphetamine, and experiences of withdrawals and recovery from methamphetamine.
- Their experience in treatment, the initial reservations, the experience of treatment, and life in sobriety.
- Consequences of drug use on their life and the lives of their family and friends.

The session facilitator may provide additional information about the Stages of Change. For an overview, please consult the "References and Recommended Reading" section for *Stages of Change in the Modification of Problem Behaviors*.

3. Breakout Session with MET Training

Motivational enhancement therapy (MET) seeks to evoke from clients their own motivation for change and to consolidate a personal decision and plan for change. The approach is largely client centered, although planned and directed. The topics covered should include:

- General description of approach.
- · Mechanism of action.
- Relationship to other styles of counseling.
- Required training.
- Session format and content.

This information is addressed in the NIDA resource "Motivational Enhancement Therapy: Description of Counseling Approach" available at the NIDA Web site: http://archives.drugabuse.gov/adac/adac9.html.

Additional information about MET can be found in pages 13–38 of the *Motivational Enhancement Therapy Manual: A Clinical Research Guide for Therapists Treating Individuals with Alcohol Abuse and Dependence* (1995) by William R. Miller. The manual is published by the National Institute on Alcohol Abuse and Alcoholism, U.S. Department of Health and Human Services.

References and Recommended Reading

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Recommended Reading

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Recommended Resources

NIDA/HBO Centerpiece Documentary (click on each of nine film segments: total time is 1 hour) http://www.hbo.com/addiction/thefilm/index.html

Interclerkship Learner Assessment Questions

- 1. For a diagnosis of methamphetamine abuse, a maladaptive pattern of abuse needs to be present over a period of:
 - 1. 1 month
 - 2. 1 year *
 - 3. 1 week
 - 4. 1 decade
- 2. Diagnosis of methamphetamine dependence requires the presence of the following number of criteria out of the possible seven:
 - 1. Three *
 - 2. Four
 - 3. Five
 - 4. Seven
- 3. Approximately the following percentage of people can be expected to have used methamphetamine in the United Sates:
 - 1. 10 percent
 - 2. 5 percent *
 - 3. 2 percent
 - 4. 1 percent
- 4. Methamphetamine dependence can be successfully treated with:
 - 1. Naltrexone
 - 2. Disulfiram
 - 3. Acamprosate
 - 4. Behavioral therapies *
- 5. Relapse rates for substance use disorders are:
 - 1. Higher than for other chronic diseases
 - 2. Lower than for other chronic diseases
 - 3. Similar to other chronic diseases*

(*Asterisks indicate correct answers)

Interclerkship Program Evaluation

Please complete the following evaluation by rating the items on the 5-point scale and providing additional feedback. Your comments, along with the ratings, will also be used to improve the curriculum, so please be specific, focus on observable behaviors and how these affect you, avoid emotionally charged language, and provide suggestions for change.

These evaluations are confidential.

- 1. This program was well designed and organized.
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
- 2. The goals for the program were clear.
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
- 3. The program followed a logical sequence.
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
- 4. The time allotted for this program was about right.
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
- 5. This approach was an effective format for learning about this aspect of Dimensions of Clinical Medicine.
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree

- 6. The facilitators were helpful to my learning.
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
- 7. I had adequate opportunity to participate.
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
- 8. I recommend offering this program to next year's Year 3 students.
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
- 9. I was pleased with the format.
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
- 10. I was pleased with what I learned about methamphetamine abuse.
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
- 11. The panel discussion was helpful to my learning.
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
- 12. This program improved my knowledge and understanding of the neuropathology and neuropharmacology of methamphetamine abuse and dependence.
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree

 13. Strongly Disagreel know where to go to find information about methamphetamine abuse and dependence as a result of this program. Strongly Agree Agree Neutral Disagree Strongly Disagree
 14. I am familiar with resources for the treatment of methamphetamine abuse and dependence in my community as a result of this program. Strongly Agree Agree Neutral Disagree Strongly Disagree
15. What did you like best about this program?
16. What do you suggest for improving this program?

Pilot Information

Interclerkship Methamphetamine Learning Assessment Pilot Data: September 2008 Administered to M3 Students

Following are the results of pilot tests using the learner assessment questions (see Interclerkship Program Evaluation).

1. For a diagnosis of methamphetamine abuse, a maladaptive pattern of abuse needs to be present over a period of:

Answer	Freq	%	r _{pbis}
1 month	0	_	0.52
1 year*	109	98.2	
1 week	2	1.8	
1 decade	0	_	

2. Diagnosis of methamphetamine dependence requires the presence of the following number of criteria out of the possible seven:

Answer	Freq	%	r_{pbis}
Three *	109	98.2	0.29
Four	0	_	
Five	0	_	
Six	2	1.8	
Seven	0	_	

3. Approximately the following percentage of people can be expected to have used methamphetamine in the United Sates:

Answer	Freq	%	r _{pbis}
10 percent	2	1.8	0.29
4 percent *	109	98.2	
2 percent	0	_	
1 percent	0	_	
Did not answer	0	0.9	

Please note that since this resource was piloted, more current data have become available on methamphetamine use in the United States. According to SAMHSA's *Results from the 2008 National Survey on Drug Use and Health: National findings,* 5 percent of Americans have ever use methamphetamine. The assessment question has been updated to reflect the new data.

4. Methamphetamine dependence can be successfully treated with:

Answer	Freq	%	r_{pbis}
Naltrexone	0	_	0.49
Disulfiram	0	_	
Antidepressant medications	1	0.9	
Behavioral therapies*	107	96.4	
Did not answer	3	2.7	

5. The treatment of substance use disorders is:

Answer	Freq	%	r _{pbis}
Less effective than treatment of other chronic diseases.	17	15.3	0.86
More effective than treatment of other chronic diseases.	2	1.8	
Has similar efficacy to treatment of other chronic	88	79.3	
diseases.*			
Did not answer	4	3.6	

Please note that since this resource was piloted, this question has changed.

6. Did you receive an adequate amount of information during today's program to answer the above questions?

Answer	Freq	%
Yes	109	98.2
No	1	0.9
Did not answer	1	0.9

- 7. Please let us know any comments you have regarding this quiz (please do not comment on the program here, you will have an opportunity online):
 - Nice Quiz!
 - #2— list 7 criteria.
 - Too much repetition!
 - Should have a physiology question.
 - The material was well covered for the quiz.

Methamphetamine Dimensions of Clinical Medicine: Methamphetamine Abuse Program Evaluation Pilot Data September 2008 Class of 2010

Following are the results of pilot tests using the dimensions program evaluation (see page 14).

Strongly Agree = 5, Strongly Disagree = 1

Strongly Agree = 5, Strong	Strongly Agree N (%)	Agree N (%)	Neutral N (%)	Disagree N (%)	Strongly Disagree N (%)	N	Mean	SD
This program was well designed and organized.	8(8)	65(68)	13(14)	8(8)	1(1)	95	3.75	0.77
The goals for the program were clear.	11(12)	63(66)	16(17)	5(5)	0(0)	95	3.84	0.69
The program followed a logical sequence.	8(8)	60(63)	18(19)	9(9)	0(0)	95	3.71	0.76
The time allotted for this program was about right.	6(6)	52(55)	17(18)	16(17)	4(4)	95	3.42	0.98
This approach was an effective format for learning about this aspect of Dimensions of Clinical Medicine.	5(5)	72(76)	13(14)	5(5)	0(0)	95	3.81	0.61
The facilitators were helpful to my learning.	15(16)	68(72)	11(12)	1(1)	0(0)	95	4.02	0.56
I had adequate opportunity to participate.	3(3)	48(51)	28(29)	15(16)	1(1)	95	3.39	0.83
I recommend offering this program to next year's Year 3 students.	12(13)	63(66)	11(12)	9(9)	0(0)	95	3.82	0.77
I was pleased with the format.	9(9)	50(53)	21(22)	12(13)	1(1)	95	3.58	0.88
I was pleased with what I learned about methamphetamine abuse.	23(24)	63(66)	8(8)	11(1)	0(0)	95	4.14	0.59
The panel discussion was helpful to my learning.	10(11)	44(46)	31(33)	10(11)	0(0)	95	3.57	0.82
This program improved my knowledge and understanding of the neuropathology and neuropharmacology of methamphetamine abuse and dependence.	14(15)	64(67)	12(13)	5(5)	0(0)	95	3.92	0.69
I know where to go to find information about methamphetamine abuse and dependence as a result of this program.	13(14)	71(75)	7(7)	4(4)	0(0)	95	3.98	0.62
I am familiar with resources for the treatment of methamphetamine abuse and dependence in my community as a result of this program.	10(11)	61(64)	15(16)	9(9)	0(0)	95	3.76	0.77

Content Analysis of Students' Comments

What did you like best about this program?

	N
Officer Discussion—"good examples; perspective; interesting"	24
Format—"multimedia; multiple professions; ½ day"	12
Final Lecture—"pharmacology, pathophysiology; cases"	11
Attorney's Lecture	5
Introductory Lecture—"informative"	5

What do you suggest for improving this program?

	N
Decrease amount of repetition/overlap among presenters	35
Include a current/former meth abuser	6
More information about legal consequences	4
More information about treatment/clinically relevant information	3
Add information about other substance abuse issues—not just meth	2

Recommendations for Improvement of This Curriculum Resource

The Principal Investigator held a mandatory Methamphetamine Abuse and Dependence Seminar at Creighton University School of Medicine, a private Midwestern medical school in Omaha, Nebraska, on September 26, 2008. The session was offered to third-year medical students during their interclerkship series entitled Dimensions of Clinical Medicine using the pilot half-day (4 hours) curriculum. Presentations during the pilot used the accompanying PowerPoint Presentation. One hundred eleven students attended this seminar (56 males, 55 females).

The summary report, especially the feedback from questions 1, 2, 3, 5, 6, 8, 10, 12, and 13, reflect a strong response to the learning objectives and content of this pilot. The item analysis of the learning assessment performed after the seminar was completed also indicated that our students understood the material well enough to answer the questions correctly. The summary report also suggested this was a worthwhile exercise to repeat for the Class of 2011. Areas of opportunity reside in the time allotment of the seminar, the opportunity to have more interaction with the learners (which is not afforded to the learner in the 4-hour format), and the panel discussion, which students viewed as not as helpful to the educational process.

Recommendations for future iterations of this curriculum resource include extending the 4-hour session to emphasize more content areas, such as a more in-depth discussion of the treatment process—including the addition of a former methamphetamine-abuse patient in the discussion panel. Student comments also stated that some repetition and overlap in seminar content was evident. A preseminar conference among instructors could help diminish the repetition and duplication of course content. Also, student comments suggest that law enforcement content and instruction could have been aimed at a higher level of student aptitude or to the adult learner; this could also be addressed in preseminar instructions. Finally, the community resource part of the content should be increased so the learners have a better idea of how to access community resources to treat their patients, whether they are in an urban or rural setting.